

Date: Wed, 1 Sep 93 04:30:17 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #33
To: Ham-Ant

Ham-Ant Digest Wed, 1 Sep 93 Volume 93 : Issue 33

Today's Topics:

directional antenna's, direction finders
Frequency Forum
SWR Meters (3 msgs)
VHF Quad Info needed. HELP!

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Tue, 31 Aug 1993 09:40:53 GMT
From: swrinde!gatech!howland.reston.ans.net!agate!doc.ic.ac.uk!uknet!mcsun!sun4n1!
ruuinf!mndell@network.ucsd.edu
Subject: directional antenna's, direction finders
To: ham-ant@ucsd.edu

I'm looking for a good working directional antenna or direction finder which
is not too expensive but does tell you N,S,E,W or something like that.
(for freq.range aprox.70-90 Mhz or 160-180 Mhz)
Does anyone know where you can get it, or kits or plans to build one?

Thanks in advance,

Mike

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M.N. Dell Telephone : +31 3434 56478
P.O. Box 134
3956 ZT Leersum The Netherlands Internet : mndell@cs.ruu.nl

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Date: 31 Aug 93 16:36:00 GMT
From: blkcat!news@uunet.uu.net
Subject: Frequency Forum
To: ham-ant@ucsd.edu

The Frequency Forum Bulletin Board System in Vienna, VA now carries
this UseNet newsgroup.

Jack Anderson, Sysop

Internet: janderson@ram.net
(alternate) jack.anderson@f239.n109.z1.fidonet.org

 -*SCANNER BBS for VA, MD, DC!-*
 -*The Frequency Forum*-(703) 207-9622-*9600/V.32/MNP-*
-*Files, Frequencies and Discussion for Scanner Hobbyists/Radio Amateurs-*

 * SLMR 2.1a *

Date: Tue, 31 Aug 93 22:47:42 GMT
From: btree!hale@network.ucsd.edu
Subject: SWR Meters
To: ham-ant@ucsd.edu

In article <CCFqC7.82q@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>

>NOTE that a true VSWR meter, one that works by actually measuring the
>RMS voltage at some distinct points along the line and NOT measuring the
>current at all, will get the right SWR answer independent of line
>impedance (assuming it's designed properly...). That is, if you
>really measure the SWR as $(V_{rms,max} / V_{rms,min})$, where the max and
>min are found by "sliding a voltmeter along the line" as it were,
>then the measurement is independent of line impedance. However, this
>is !!_NOT_!! the way any of the common SWR bridges work.

Very true - most SWR meters take a sample of the forward power and
a separate sample of the reflected power, rectify them, and then

display one or the other on a DC meter. The ratio is then interpreted as SWR.

There was a time when it was common to measure VSWR. This was done with a slotted line and a carriage which moved a voltage probe along the length of the line. The RF voltage sampled by the probe could tell you quite a few things - what the VSWR was, the actual impedance at any position in the line (assuming that you knew a couple of other things about the setup), and the phase velocity of the slotted line.

Hardly anybody uses slotted lines anymore because there are faster, better, and more accurate ways to make the measurement. But for some reason many people still talk about VSWR as though it might be different than SWR. In all practical cases that I have dealt with, there is no difference.

Bob Hale
...!hale@brooktree.com (preferred)

...!ucsd!btree!hale

Date: 31 Aug 93 17:21:23 GMT
From: ogicse!hp-cv!hp-pcd!hpcvsnz!tomb@network.ucsd.edu
Subject: SWR Meters
To: ham-ant@ucsd.edu

Gary Coffman (gary@ke4zv.uucp) wrote:
: In article <CCL275.Lu4@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
: >Gary Coffman (gary@ke4zv.uucp) wrote:
: >: In article <CCE94p.H6z@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns)
writes:
: >: >Gary Coffman (gary@ke4zv.uucp) wrote:
: >
: >: If you'll recall the part of the post previous to what you quoted,
: >: you'll note that I'm describing the behavior with a *pulse* of RF
: >: down the line from the generator. That's a common way to describe
: >
: > I did look up Gary's posting
: >which I had originally quoted and found no reference in the area
: >previous to what I quoted to a "pulse of RF". Indeed, on rereading,
: >it looked like he was talking about steady-state.

: Well here's the relevant part of the post.

: A transmission line has a characteristic impedance. That's the impedance

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: a generator would see if it impressed a pulse on an infinitely long line
:                                     ^^^^^
: segment. This impedance exists because of the distributed inductance and
: capacitance of the line. Since that's purely reactive, no power is dissipated

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Date: 31 Aug 93 19:04:14 GMT
From: ogicse!hp-cv!sdd.hp.com!cs.utexas.edu!asuvax!chnews!news@network.ucsd.edu
Subject: SWR Meters
To: ham-ant@ucsd.edu

In article <CCMw7n.Fvg@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:

>OK, Gary, what's it going to be? A pulse, a pulse of RF, waves,
>AC, what??? How do you propose to talk about phase in pulses??

Sheesh! Give it a rest, you two.

Ob. Ant.: It's an article of faith that RF energy propagates down a transmission line in TEM (Transverse Electro-Magnetic) mode. Is this always true of microstrip? Is there a condition where the fields could be confined in the microstrip medium and a waveguide-like mode (non-TEM) be supported? Or would it only be a matter of making the conductor spacing and width a significant fraction of a wavelength? Expired minds want to know!

Jim, W5GYJ

Date: 31 Aug 93 13:30:00 GMT
From: ogicse!uwm.edu!wupost!cs.utexas.edu!TAMUTS.TAMU.EDU!zeus.tamu.edu!
tskloss@network.ucsd.edu
Subject: VHF Quad Info needed. HELP!
To: ham-ant@ucsd.edu

A few weeks ago I passed my first amateur radio exam and am waiting for my tech no-code license from the FCC... and waiting.

In the meantime I have been building antennas for my future hobby. Transmitter hunts are popular here (at least 2 evenings a month) and I am building a VHF quad so I can participate with my new (used) HT. I like to do things right the first time and working in a laboratory environment makes me methodical and scientific.

I am building the quad as per instructions in the ARRL handbook:

12 guage insulated copper wire (coarse stranded)
fiberglass spreader rods (from cheapo arrows at hardware store)
1" schedule 40 PVC pipe for spreader mounts and mast

My questions follow:

Why 75 ohm feed line? I want the best tune and match. Working in a lab based on RF energy (but funny how nobody here knows anything about RF, that's why I'm a HAM!) I have the available parts and equipment to build a tuning circuit (RF capacitors and inductors).

How does someone tune a quad as they are assembling it? Are there any precalculated dimensions with guaranteed results using the aforementioned hardware?

Basically, I want a decent, well tuned VHF quad for direction finding AND transmitting up to 100 watts PEP. (But actually, 50 watts PEP is OK)

Any and all help will be gladly appreciated and, if able, recipricated.

BTW- it would be great if a beginner --without a ticket, yet-- would show up 'tallyhoe on the fox' before the seasoned HAMs (not the ones for eating, of course 8-).

-thanks again! 73!

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|* *( * ( ** ) ( * * ) * * ) * |               Tim Skloss          | | | | |
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|*   /===== \   * |   College Station, TX 77843-3255             |
|*   | OXFORD   |   * |   LABORATORY FOR MAGNETIC RESONANCE AND      |
|   | mags.    |   * |   MOLECULAR SCIENCE                          |
|*   | RULE!   |   |   voice: (409) 845-4459                         |
|   | _____|   |   fax:   (409) 845-4719                        |
|   ||         ||   |   Internet: TSKLOSS@venus.tamu.edu            |
|   ==        ==   |   My opinions do not reflect those of TAMU!   |
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"The brain is much like a computer;
there are really no dumb people, just people running DOS!"
PowerPC - The ULTIMATE personal computing machine.

Date: (null)

From: (null)

:impedance. Similarly, if you measured the current anywhere along the

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:line,  $I=\sqrt{P/R}$ , and the current and voltage waveforms will be *in
:phase*. Remember we're dealing with AC here, and AC across a resistor
          ^^^^^^^^^^^^^^^^^^^
:will be in phase, and to the generator the line looks like a resistor.
          ^^^^^^^
:
:....
:
:generator. Voltage and current waves will once again be in phase, but
:travelling in a different direction. This is called the reflected wave.
:If the line is shorted instead of open, then voltage goes to zero, and
:current becomes maximum, a very low impedance. The same things happen
:to the waves as in the open case except that the signs of the phases
:are reversed.
:
:....
:
:Ok, now what do we see if we measure the voltage along the line?
:Since we now have two waves, forward and reflected, moving along
:the same line,

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OK, Gary, what's it going to be? A pulse, a pulse of RF, waves,
AC, what??? How do you propose to talk about phase in pulses??

Tell me, Gary, do you measure SWR with your monimatch, resistive
bridge, transformer bridge, Bird, or what-have-you, with pulse
excitation?? Seems like a reasonable application of a TDR, but
with a bridge?? Or was that a "pulse of RF" you used there?
Or maybe it was "AC"? Was that a single frequency AC signal?
;-)

End of Ham-Ant Digest V93 #33
